



UNITED STATES PATENT AND TRADEMARK OFFICE

20

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,999	02/18/2004	John A. Johansen	2065.002300	2417
23720	7590	06/06/2005	EXAMINER	
WILLIAMS, MORGAN & AMERSON, P.C. 10333 RICHMOND, SUITE 1100 HOUSTON, TX 77042			WAKS, JOSEPH	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/780,999	Applicant(s) JOHANSEN ET AL.	
	Examiner Joseph Waks	Art Unit 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-26, 29, 30, 32-38 and 40-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 53-55 and 57-62 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-10, 15-24, 29, 30, 32-34, 36-38, 40-42, 46-48, 51, 52 and 56 is/are rejected.
- 7) ☒ Claim(s) 11-14, 25, 26, 35, 43-45, 49 and 50 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 April 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>4/20/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

Replacement Drawing Sheets

Drawing changes must be made by presenting replacement sheets which incorporate the desired changes and which comply with 37 CFR 1.84. An explanation of the changes made must be presented either in the drawing amendments section, or remarks, section of the amendment paper. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). A replacement sheet must include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of the amended drawing(s) must not be labeled as "amended." If the changes to the drawing figure(s) are not accepted by the examiner, applicant will be notified of any required corrective action in the next Office action. No further drawing submission will be required, unless applicant is notified.

Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and within the top margin.

Annotated Drawing Sheets

A marked-up copy of any amended drawing figure, including annotations indicating the changes made, may be submitted or required by the examiner. The annotated drawing sheet(s) must be clearly labeled as "Annotated Sheet" and must be presented in the amendment or remarks section that explains the change(s) to the drawings.

Timing of Corrections

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.85(a). Failure to take corrective action within the set period will result in ABANDONMENT of the application.

If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for reply in the "Notice of Allowability." Extensions of time may **NOT** be obtained under the

Art Unit: 2834

provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability.

Allowable Subject Matter

1. The indicated allowability of claims 6-10, 16, 23, 28, 29, 31, 35, 39-42, 49, 50 and 51 is withdrawn in view of the newly discovered reference(s) to Grosso (US 4,013,945) and Patton et al. (US 3,968,473). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 7-10, 15-17, 38, 40-42 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stone (US 3,373,806) in view of Grosso (US 4,013,945).

Stone discloses a sub-sea installation including an oil production flow line 62, a turbine 72 operatively connected to the flow line, the turbine being rotatable by fluid flowing through the flow line to generate the electrical power output when rotated.

However, Stone does not disclose the at least one speed sensor for sensing a rotational speed of the turbine.

Grosso discloses a well bore installation including a flow injection line 12, a turbine 52 operatively connected to the flow line, the turbine being rotated by fluid flowing through the flow line to generate the electrical power output having frequency

Art Unit: 2834

proportional to the turbine speed when rotated, and a speed sensor 58 for sensing a rotational speed of the turbine by sensing the frequency in its windings 64, 66, an electrically operated valve actuator 57 for the purpose of generating signals corresponding to speed variations of the turbine drill shaft and transmitting the signal to the signal receiving unit 48.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the sub-sea installation as taught by Stone and to provide the speed sensor as taught by Grosso for the purpose of generating signals corresponding to speed variations of the turbine drill shaft and transmitting the signal to the control unit.

Re claim 3, it would have been further obvious to one having ordinary skill in the art at the time the invention was made to design the sub-sea installation as taught by Stone and to provide the injection line as taught by Grosso for the purpose of hydraulically driving the drill.

Re claim 38, the combined system discloses the sub-sea installation as claimed. Claim 38 that merely recites connecting and using the disclosed features together are inherent to the disclosed structure.

4. Claims 1-3, 7-10, 15-20, 30, 33, 38, 40-42, 46-48, 52 and 56 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Abramov et al. (US 6,460,936) in view of Grosso (US 4,013,945).

Abramov et al. disclose in Figures 1 and 14 a sub-sea installation including a production and injection flow line 56, a turbine 302 operatively connected to the flow

Art Unit: 2834

line, the turbine being rotatable by fluid flowing through the flow line to generate the electrical power output when rotated. However, Abramov et al. do not disclose the at least one speed sensor for sensing a rotational speed of the turbine.

Grosso disclose a well bore installation including a flow injection line 12, a turbine 52 operatively connected to the flow line, the turbine being rotated by fluid flowing through the flow line to generate the electrical power output having frequency proportional to the turbine speed when rotated, and a speed sensor 58 for sensing a rotational speed of the turbine by sensing the frequency in its windings 64, 66, for the purpose of generating signals corresponding to speed variations of the turbine drill shaft and transmitting the signal to the signal receiving unit 48, and the valve actuator 57 for the purpose of creating pulses in the mud stream to provide telemetric data at the surface.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the sub-sea installation as taught by Stone and to provide the speed sensor as taught by Grosso for the purpose of generating signals corresponding to speed variations of the turbine drill shaft and transmitting the signal to the control unit and to provide the valve actuator for creating the pulses in the mud stream to be received at the surface.

Re claims 15 and 17, Abramov et al. disclose in Figure 14 an electrically operated component 184 including a control module 190, wherein the electrical power output is supplied to the electrically operated component.

Re claims 18 and 19, Abramov et al. disclose in Figure 14 the battery 186.

Art Unit: 2834

Re claim 33, Abramov et al. disclose in Figure 14 the sub-sea installation including an electrical power storage device 186 fed by the electrical power output and the electrically operated component 190 powered by the electrical power storage device for the purpose of generating a control signal for the monitoring the well operation.

Re claims 38, and 46-48, the combined system discloses the sub-sea installation as claimed. Claim 38 that merely recites connecting and using the disclosed features together are inherent to the disclosed structure.

5. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abramov et al. (US 6,460,936) in view of in view of Grosso (US 4,013,945) as applied to claim 1 above and further in view of Tubel et al. (US 5,839,508).

The combined sub-sea installation discloses all elements essentially as claimed. However, it does not disclose the control valve controlling the fluid flow to the turbine.

Tubel et al. disclose a downhole apparatus including a turbine generator 32, 33, 42 including a control valve 30 to control the fluid flow to the turbine and having one position to allow the flow through the turbine and a second position to bypass the turbine.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the installation as taught by Abramov et al. and to provide the control valve as taught by Tubel et al. for the purpose of regulating the fluid flow through the turbine.

Art Unit: 2834

6. Claims 21- 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abramov et al. (US 6,460,936) Grosso (US 4,013,945) as applied to claim 1 above and further in view of Skoblo (WO 99/39080).

The combined sub-sea installation discloses all elements essentially as claimed. However, it does not disclose a control module for controlling the turbine wherein the control module causes said turbine to selectively be in at least a first state wherein the turbine generates electrical power, and a second state wherein the turbine does not generate electrical power.

Skoblo disclose a drilling tool having a control module 13 connected to the input load switch 13 connecting or disconnecting the load from the generator 9 thus causing the turbine to generate or not generate electrical power (Re page 7, lines 19- 29 and page 8, lines 1-11, for the purpose of modulating the turbine load.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined installation and to provide the control module as taught by Skoblo for the purpose of modulating the turbine load.

7. Claims 24 and 51 rejected under 35 U.S.C. 103(a) as being unpatentable over Stone (US 3,373,806) in view of Grosso (US 4,013,945) as applied to claims 1 and 38 above and further in view of Jurgens (US 4,415,823).

The combined sub-sea installation discloses all elements essentially as claimed. However, it does not disclose the turbine including a rotary member having a plurality of blades and at least one rotating magnet and a fixed housing, wherein rotation of said

Art Unit: 2834

rotary member causes relative movement between the at least one rotating magnet and the fixed housing to generate the electrical power output.

Jurgens discloses electrical turbine generator located in a wellbore having a rotary member including blades 14 and permanent magnets 39 and a fixed housing 41, 42 that is capable of producing electric power required for wellbore located electrical systems that can be accommodated within the restrained space of the wellbore.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined sub-sea installation and to provide the turbine including a rotary member having a plurality of blades and at least one rotating magnet and a fixed housing as taught by Jurgens for the purpose of providing a turbine capable of producing electric power required for the wellbore located electrical systems that can be accommodated within the restrained space of the wellbore.

8. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stone (US 3,373,806) in view of Grosso (US 4,013,945) as applied to claim 1 above and further in view of Jurgens (US 4,415,823) as applied to claim 24 above and furthermore in view of Patton (US 3,968,473).

The combined sub-sea installation discloses all elements essentially as claimed. However, it does not disclose the communication unit including at least one acoustic receiver.

Patton discloses the wellbore installation including communication unit with an acoustic receiver 41 that receives the acoustic signals in the drilling mud and transfers it to the receiver 42 for the purpose of monitoring the measured down-hole conditions.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined sub-sea installation and to provide the well known in the wellbore art communication unit including at least one acoustic receiver as taught by Patton for the purpose of monitoring the measured down-hole conditions.

9. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Abramov et al. (US 6,460,936) in view of Grosso (US 4,013,945) as applied to claim 30 above and further in view of Pearson (GB 2266546A).

The combined sub-sea installation discloses all elements essentially as claimed.
30. However, it does not disclose the sub sea Christmas tree.

Pearson discloses in Figure 14 the sub-sea installation including the sub sea Christmas 30 tree a well known in the art system for connecting and regulating the product flow from the well located at the sea bottom to the drilling platform.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined installation and to provide the Christmas tree as taught by for the purpose of connecting and regulating the product flow from the well located at the sea bottom to the drilling platform.

10. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Abramov et al. (US 6,460,936) in view of Grosso (US 4,013,945) as applied to claim 30 above and further in view of Abramov et al. (US 6,460,936) as applied to claim 33 above and furthermore in view of Skoblo (WO 99/39080).

The combined sub-sea installation disclosed all elements essentially as claimed.
However, it does not disclose a control module for controlling the turbine wherein the

Art Unit: 2834

control module causes said turbine to selectively be in at least a first state wherein the turbine generates electrical power, and a second state wherein the turbine does not generate electrical power.

Skoblo disclose a drilling tool having a control module 13 connected to the input load switch 13 connecting or disconnecting the load from the generator 9 thus causing the turbine to generate or not generate electrical power (Re page 7, lines 19- 29 and page 8, lines 1-11, for the purpose of modulating the turbine load.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined installation and to provide the control module as taught by Skoblo for the purpose of modulating the turbine load.

Allowable Subject Matter

11. Claims 53-55 and 57-62 are allowed.

Re claims 53-55, the feature of the first pressure sensor sensing the first pressure on one side of said choke valve and the second pressure sensor sensing the second pressure on the other side of the choke valve, in combination with the other limitations present, are neither disclosed nor taught by the prior art of record.

Re claim 57, the feature of the at least one charge sensor sensing the charge level of the electrical power storage device, wherein the charge level determines the selection of the first and second states of the turbine by the control module, in combination with the other limitations present, are neither disclosed nor taught by the prior art of record.

Re claims 58-62, the feature of the turbine positioned above the floor and below the surface of the body of water, in combination with the other limitations present, are neither disclosed nor taught by the prior art of record.

12. Claims 11-14, 25, 26, 35, 43-45, 49 and 50 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Re claim 11, the feature of the electrical power output including a three-phase AC signal, and the direction sensor including a phase sequence sensor for sensing the sequence of at least two phases of the three-phase AC signal, are neither disclosed nor taught by the prior art of record.

Re claims 12-14, and 43-45, the feature of the first pressure sensor sensing the first pressure on one side of said choke valve and the second pressure sensor sensing the second pressure on the other side of the choke valve, in combination with the other limitations present, are neither disclosed nor taught by the prior art of record.

Re claims 25 and 26, the feature of the turbine positioned in a closed loop in fluid communication with the flow line, in combination with the other limitations present, are neither disclosed nor taught by the prior art of record.

Re claim 35, the feature of the at least one charge sensor sensing the charge level of the electrical power storage device, wherein the charge level determines the selection of the first and second states of the turbine by the control module, in combination with the other limitations present, are neither disclosed nor taught by the prior art of record.

Re claims 49 and 50, the feature of the control module having at least one charge sensor for sensing the charge level of the electrical power storage device, wherein the charge level determines the selection of the first and second states of the turbine, are neither disclosed nor taught by the prior art of record.

Re claims 28, 29 and 51, the feature of the acoustic transmitter and acoustic receiver actuator, in combination with the other limitations present, are neither disclosed nor taught by the prior art of record.

Response to Arguments

13. Applicant's arguments with respect to claims 1, 24, 30, 38 and 52 have been considered but are moot in view of the new ground(s) of rejection.

Prior Art

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Waks whose telephone number is (571) 272-2037. The examiner can normally be reached on Monday through Thursday 8 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren E. Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2834

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joseph Waks
Primary Examiner
Art Unit 2834

5/31/05

Not approved
JW 5/25/05

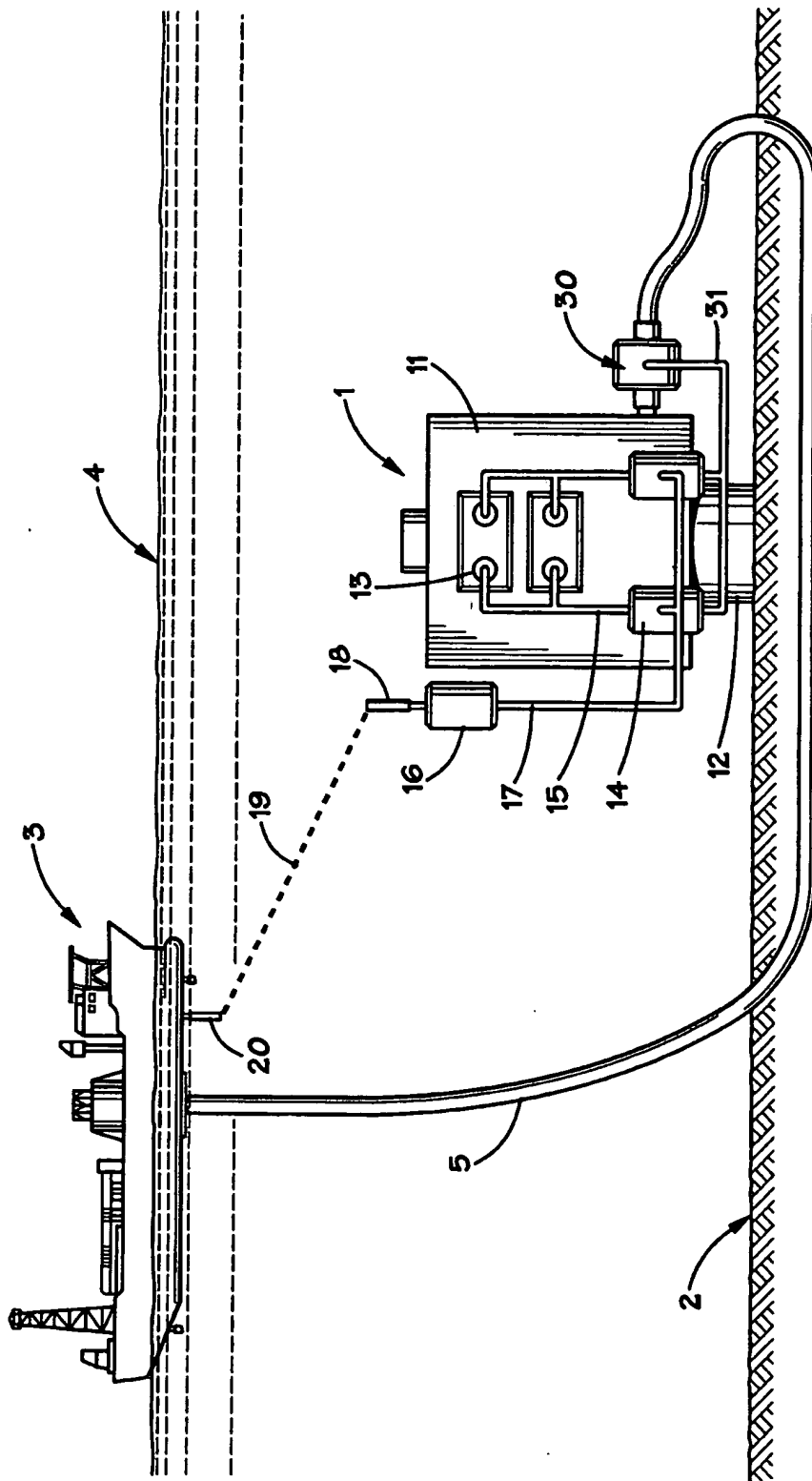
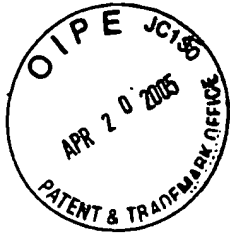


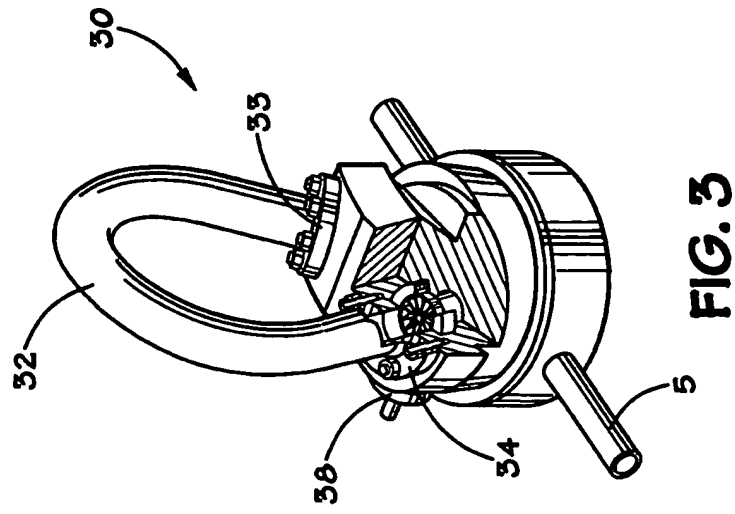
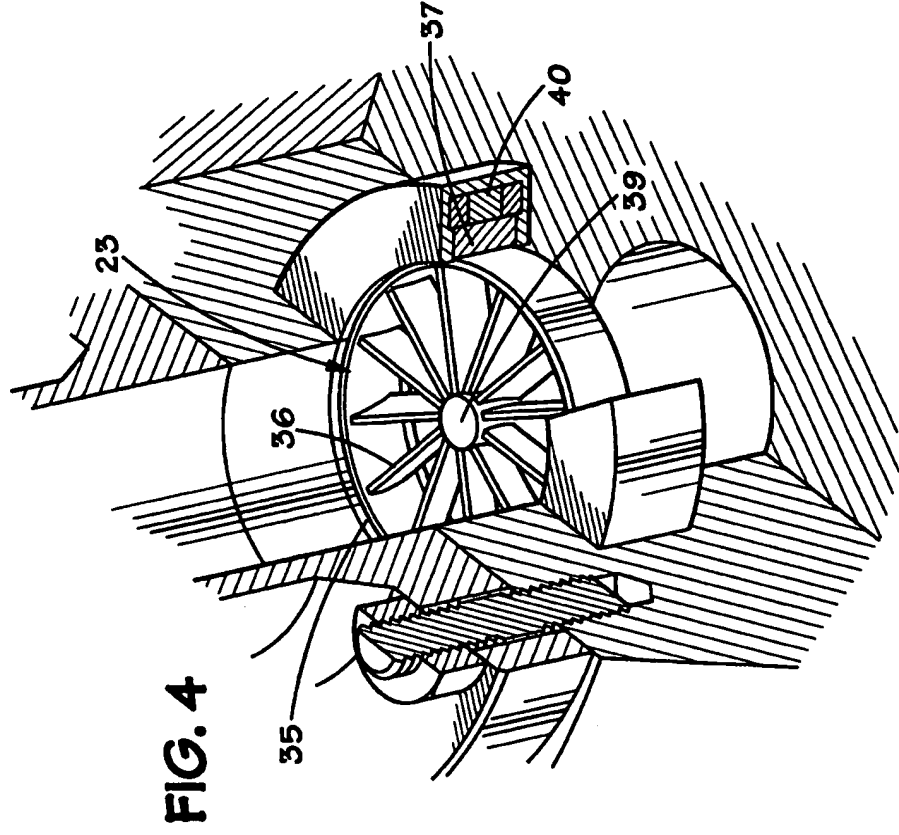
FIG. 1

⊕



FIG. 2

Not approved
5/25/05 Jw



Not approved
5/25/05 JW

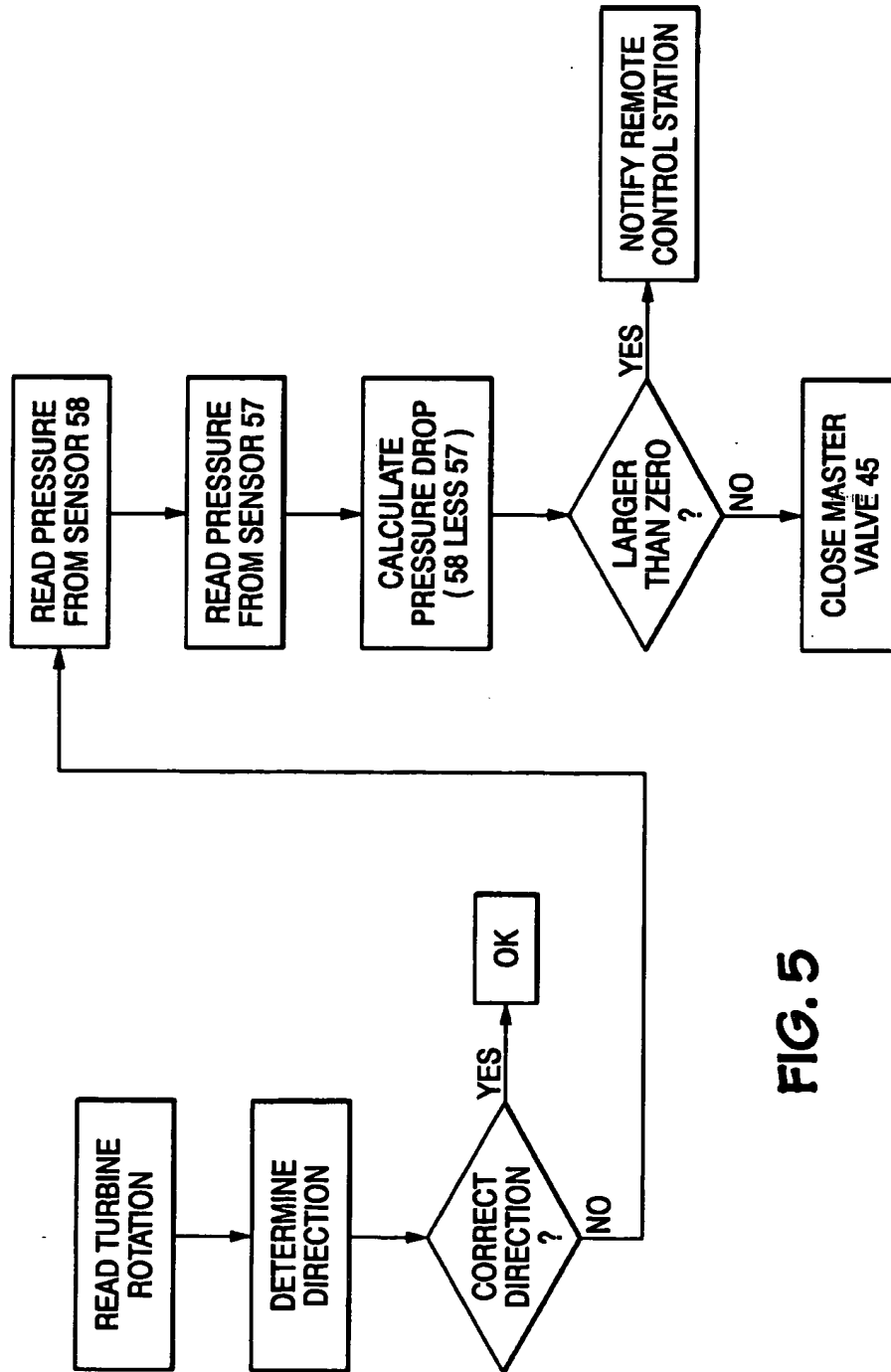


FIG. 5